MULTIMEDIA UNIVERSITY

STUDENT ID NO

MULTIMEDIA UNIVERSITY

FINAL EXAMINATION

TRIMESTER 2, 2017/2018

BQT1614 – QUANTITATIVE ANALYSIS

(All sections / Groups)

5 MARCH 2018
2.30 p.m – 5.30 p.m
(3 Hours)

INSTRUCTIONS TO STUDENTS

1. This question paper consists of **ELEVEN (11)** printed pages including the statistical formulae and statistical tables.
2. This question paper consists of 5 structured questions. Attempt **ALL** questions.
3. Students are allowed to use non-programmable scientific calculators with no restrictions.
4. Statistical tables are attached at the end of the question paper.
5. Please use **pen** to write the answers.
6. Please write all your answers in the Answer Booklet provided.

QUESTION 1 (20 MARKS)

(a) In the University of Florida, a sample of 25 undergraduate students reported the following dollar amounts of entertainment expenses last year:

684	752	696	731	711	771	693	743	717
763	710	710	721	736	685	723	737	
722	681	688	697	722	698	701	738	

(i) Find the mean, standard deviation and median.

(5 marks)

(ii) Determine the relative dispersion of the amounts of entertainment expenses.

(3 marks)

(iii) Describe the distribution of data through Pearson's Coefficient of Skewness.

(3 marks)

(b) Dr. Susan Benner is an industrial psychologist. She is currently studying stress among executives of investment companies. She has developed a questionnaire that she believes measure stress. A score above 80 indicates stress at a dangerous level. A random sample of 15 executives revealed the following stress level scores:

94	90	97	90	100
78	78	90	93	75
83	99	97	94	84

(i) Construct a 95 percent confidence interval for the mean stress level among the executives. The population standard deviation is 16.57.

(6 marks)

(ii) How many of executives would be needed to gain stress level scores within 55% margin of error with 95% confidence level?

(3 marks)

Continued...

QUESTION 2 (20 MARKS)

(a) A recent survey by the American Accounting Association revealed 23 percent of students graduating with a major in accounting select public accounting. A random sample of 15 recent graduates have been selected.

(i) How many graduates would you expect to select public accounting?

(4 marks)

(ii) What is the probability that 14 graduates would select public accounting?

(2 marks)

(iii) Calculate the probability that at least three graduates would select public accounting.

(4 marks)

(b) The Uniform CPA Examination protects the public interest by helping to ensure that only qualified individual becomes licensed as Certified Public Accountants (CPAs). The operational question has also been statistically evaluated to ensure they meet the psychometric requirements of the CPA exam. Section scores are reported on a scale that ranges from 0 to 99. A total reported score of 75 is required to pass the exam. A survey of accounting students reveals that among CPA scores above 75, 66% took a preparatory course, whereas among CPA scores of less than 75 only 13% took a preparatory course. An accounting student has determined that he need a score of more than 75 to get the certificate but the chances of getting that high a score is 8%. Determine the probability of scoring more than 75 given he did not take a preparatory course. Solve the question by drawing the tree diagram.

(10 marks)

Continued...

QUESTION 3 (20 MARKS)

(a) At an accounting firm, a researcher gathers the following data. From his visitation, 59 percent are male, 32 percent are certified accountant and 21 percent are male certified accountant.

(i) A male accountant has been selected. What is the probability he is a certified accountant?

(3 marks)

(ii) State the probability of an uncertified accountant in the firm.

(2 marks)

(iii) Are male and uncertified accountant independent? Explain using statistical theorem.

(3 marks)

(b) Averagely, gasoline usage in the United States had grown at a seasonally adjusted rate of \$0.57 per month with a standard deviation of \$0.10. In 15 randomly chosen months between 1975 and 1985, gasoline usage grew at an average rate \$0.33 per month. At 5% level of significance, can you conclude that the growth in the usage of gasoline had decreased as a result of the embargo and its consequences?

(5 marks)

(c) A group of clinical physicians is performing tests on patients to determine the effectiveness of a new antihypertensive drug. Patients with high blood pressure were randomly chosen and then randomly assigned to either the control group (which received a well-established antihypertensive) or the treatment group (which received the new drug). The doctors noted the percentage of patients whose blood pressure was reduced to a normal level within 1 year. At the 2.5% level of significance, test whether the new drug is significantly more effective than the older drug in reducing high blood pressure.

Group	Proportion which Improved	Number of Patients
Treatment	0.45	120
Control	0.36	150

(7 marks)

Continued...

QUESTION 4 (20 MARKS)

A property appraiser wants to model the relationship between the sale price (dollars) of a residential property in a mid-size city and appraised land value (dollars) of the property. The appraiser selected a random sample of 12 properties that were sold in a particular year. The data are given in table below:

Sale Price ($)	Land Value ($)
68 900	5960
48 500	9000
55 500	9500
62 000	10 000
116 500	18 000
45 000	8500
38 000	8000
83 000	23 000
59 000	8100
47 500	9000
40 500	7300
40 000	8000

(a) State the independent and dependent variables.

(2 marks)

(b) Identify the relationship which exist between these two variables using correlation of coefficient.

(5 marks)

(c) Compute the coefficient of determination and fully interpret its meaning.

(3 marks)

(d) Use the method of least squares to estimate the regression line between the sale price and appraised land value.

(5 marks)

(e) What does the slope of the estimated regression line indicate?

(2 marks)

(f) Predict the property's sale price if the land value is set at $5000.
Explain the reliability of the prediction.

(3 marks)

Continued...

QUESTION 5 (20 MARKS)

(a) North Incorporation has developed a substantial market share in the food industry. The prices and number of units sold for their products for year 2005 and 2015 are provided below:

Foods	2005		2015	
	Price (MYR)	Quantity	Price (MYR)	Quantity
Rice	15	150	13.50	135
Beef	50	150	55	165
Cabbage	2	100	2	100
Papaya	4	100	4.80	120

(i) Determine the Aggregate Price Index for the 2015 period.

(2 marks)

(ii) Compute and interpret the Laspeyres Price Index (LPI) for 2015, using 2005 as the base period.

(3 marks)

(iii) Compute and interpret the Paashe Price Index (PPI) for 2015, using 2005 as the base period.

(3 marks)

(iv) Calculate the Fisher's Price Index for 2015. Interpret your calculation.

(2 marks)

(b) A person amortizes a loan of RM 757 000 for a new property by obtaining a 35-year mortgage at the rate 13.33% compounded monthly. Find the monthly payment, the total interest charges and the principal remaining after 30 years.

(6 marks)

(c) In 20 years, a RM 77 000 fax machine will have a salvage value of RM 7 700. A new fax machine at that time is expected to sell for RM 100 000. In order to provide funds for the difference between the replacement cost and the salvage value, a sinking fund is set up into which equal payments are placed at the end of each year. If the fund earns 12.38% compounded annually, how much should each payment be?

(4 marks)

End of Paper

STATISTICAL FORMULAE

A. DESCRIPTIVE STATISTICS

Mean ($\bar{x}$) = $\dfrac{\sum_{i=1}^{n} X_i}{n}$

Standard Deviation (s) = $\sqrt{\dfrac{\sum_{i=1}^{n} X_i^2}{n-1} - \dfrac{(\sum_{i=1}^{n} X_i)^2}{n(n-1)}}$

Coefficient of Variation (CV) = $\dfrac{\sigma}{\overline{X}} \times 100$

Pearson's Coefficient of Skewness (S_k) = $\dfrac{3(\overline{X} - Median)}{s}$

B. PROBABILITY

P (A or B) = P (A) + P (B) – P (A and B)

P (A and B) = P (A)× P (B)   if A and B are independent

P (A | B) = P (A and B) ÷ P (B)

Poisson Probability Distribution

If X follows a Poisson Distribution , $P(\lambda)$ where $P(X = x) = \dfrac{e^{-\lambda}\lambda^x}{x!}$

then the mean = $E(X) = \lambda$ and variance = $VAR(X) = \lambda$

Binomial Probability Distribution

If X follows a Binomial Distribution B(n, p) where $P(X = x) = {}^nC_x p^x q^{n-x}$

then the mean = $E(X) = np$ and variance = $VAR(X) = npq$ $where\ q = 1 - p$

Normal Distribution

If X follows a Normal distribution, $N(\mu, \sigma)$ where $E(X) = \mu$ and $VAR(X) = \sigma^2$

then $Z = \dfrac{X - \mu}{\sigma}$.

C. CONFIDENCE INTERVAL ESTIMATION AND SAMPLE SIZE DETERMINATION

(100 – α) % Confidence Interval for Population Mean (σ Known) = $\mu = \overline{X} \pm Z_{\alpha/2}\left(\sigma/\sqrt{n}\right)$

(100 – α)% Confidence Interval for Population Mean (σ Unknown) = $\mu = \overline{X} \pm t_{\alpha/2,n-1}\left(s/\sqrt{n}\right)$

(100 – α)% Confidence Interval for Population Proportion = $\pi = p \pm Z_{\alpha/2}\sqrt{\dfrac{p(1-p)}{n}}$

Sample Size Determination for Population Mean $= n \geq \left[\dfrac{(Z_{\alpha/2})\sigma}{E}\right]^2$

Sample Size Determination for Population Proportion $= n \geq \dfrac{Z^2 \times p(1-p)}{E^2}$

Where E = Limit of Error in Estimation

D. HYPOTHESIS TESTING

One Sample Mean Test

Standard Deviation (σ) Known	Standard Deviation (σ) Not Known
$Z = \dfrac{\bar{x}-\mu}{\sigma/\sqrt{n}}$	$t = \dfrac{\bar{x}-\mu}{s/\sqrt{n}}$

One Sample Proportion Test

$$Z = \frac{p-\pi}{\sqrt{\dfrac{\pi(1-\pi)}{n}}}$$

Two Sample Mean Test

Standard Deviation (σ) Known	Standard Deviation (σ) Not Known
$z = \dfrac{(\overline{x}_1-\overline{x}_2)-(\mu_1-\mu_2)}{\sqrt{\sigma_1^2/n_1 + \sigma_2^2/n_2}}$	$t = \dfrac{(\overline{x}_1-\overline{x}_2)-(\mu_1-\mu_2)}{\sqrt{S_p^2\left(1/n_1 + 1/n_2\right)}}$ where $S_p^2 = \dfrac{(n_1-1)S_1^2+(n_2-1)S_2^2}{(n_1+n_2-2)}$

Two Sample Proportion Test

$$Z = \frac{(p_1-p_2)-(\pi_1-\pi_2)}{\sqrt{\bar{p}(1-\bar{p})\left(\dfrac{1}{n_1}+\dfrac{1}{n_2}\right)}}$$ where $\bar{p} = \dfrac{X_1+X_2}{n_1+n_2}$; $p_1 = \dfrac{X_1}{n_1}$; $p_2 = \dfrac{X_2}{n_2}$

where X_1 and X_2 are the number of successes from each population

E. REGRESSION ANALYSIS

Simple Linear Regression

$Y_i = \beta_0 + \beta_1 X_1 + \varepsilon_I$ Where $\beta_0 = \overline{Y} - \beta_1 \overline{X}$ and $\beta_1 = \dfrac{\sum XY - \left[\dfrac{\sum X \sum Y}{n}\right]}{\left[\sum X^2 - \left(\dfrac{(\sum X)^2}{n}\right)\right]}$

Correlation Coefficient

$$r = \frac{\sum XY - \left[\dfrac{\sum X \sum Y}{n}\right]}{\sqrt{\left[\sum X^2 - \left(\dfrac{(\sum X)^2}{n}\right)\right]\left[\sum Y^2 - \left(\dfrac{(\sum Y)^2}{n}\right)\right]}} = \frac{COV(X,Y)}{\sigma_X \sigma_Y}$$

ANOVA Table for Regression

Source	Degrees of Freedom	Sum of Squares	Mean Squares
Regression	1	SSR	MSR = SSR/1
Error/Residual	$n-2$	SSE	MSE = SSE/($n-2$)
Total	$n-1$	SST	

Test Statistic for Significance of the Predictor Variable

$t_i = \dfrac{b_i}{S_{b_i}}$ and the critical value $= \pm t_{\alpha/2,(n-p-1)}$

Where p = number of predictor

F. INDEX NUMBERS

Simple Price Index

$$P = \frac{p_t}{p_0} \times 100$$

Laspeyres Quantity Index

$$P = \frac{\sum p_0 q_t}{\sum p_0 q_0} \times 100$$

Aggregate Price Index

$$P = \frac{\sum p_t}{\sum p_0}(100)$$

Paasche Quantity Index

$$P = \frac{\sum p_t q_t}{\sum p_t q_0} \times 100$$

Laspeyres Price Index

$$P = \frac{\sum p_t q_0}{\sum p_0 q_0} \times 100$$

Fisher's Ideal Price Index

$$\sqrt{(Laspeyres\ Price\ Index)(Paasche\ Price\ Index)}$$

Paasche Price Index

$$P = \frac{\sum p_t q_t}{\sum p_0 q_t} \times 100$$

Value Index

$$V = \frac{\sum p_t q_t}{\sum p_0 q_0} \times 100$$

G. FINANCIAL MATHEMATICS

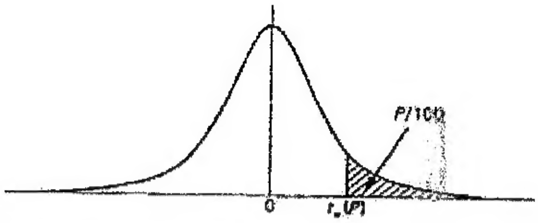
Simple Interest $I = Pnr$ $A = P(1+nr)$	**Compounded Interest** $I_t = P[(1+i)^n - 1]$ $A_t = P(1+i)^n$
Effective Rate of Interest $r_{effective} = \left(1+\frac{r}{m}\right)^m - 1$	**Sinking Fund** $S = R\left[\frac{(1+i)^n - 1}{i}\right]$
Future Value $A_t = P(1+i)^n$	**Present Value** $P = A(1+i)^{-n}$
Future Value of an Annuity $FV_A = R\left[\frac{(1+i)^n - 1}{i}\right]$	**Present Value of an Annuity** $PV_A = R\left[\frac{1-(1+i)^{-n}}{i}\right]$
Amortization $R = \left[\frac{P(i)}{1-(1+i)^{-n}}\right]$	

TABLE 10. PERCENTAGE POINTS OF THE t-DISTRIBUTION

This table gives percentage points $t_\nu(P)$ defined by the equation

$$\frac{P}{100} = \frac{1}{\sqrt{\nu\pi}} \frac{\Gamma(\frac{1}{2}\nu+\frac{1}{2})}{\Gamma(\frac{1}{2}\nu)} \int_{t_\nu(P)}^{\infty} \frac{dt}{(1+t^2/\nu)^{\frac{1}{2}(\nu+1)}}.$$

Let X_1 and X_2 be independent random variables having a normal distribution with zero mean and unit variance and a χ^2-distribution with ν degrees of freedom respectively; then $t = X_1/\sqrt{X_2/\nu}$ has Student's t-distribution with ν degrees of freedom, and the probability that $t \geqslant t_\nu(P)$ is $P/100$. The lower percentage points are given by symmetry as $-t_\nu(P)$, and the probability that $|t| \geqslant t_\nu(P)$ is $2P/100$.



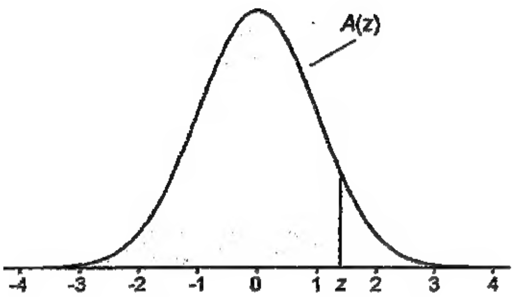
The limiting distribution of t as ν tends to infinity is the normal distribution with zero mean and unit variance. When ν is large interpolation in ν should be harmonic.

P	40	30	25	20	15	10	5	2·5	1	0·5	0·1	0·05
$\nu = 1$	0·3249	0·7265	1·0000	1·3764	1·963	3·078	6·314	12·71	31·82	63·66	318·3	636·6
2	0·2887	0·6172	0·8165	1·0607	1·386	1·886	2·920	4·303	6·965	9·925	22·33	31·60
3	0·2767	0·5844	0·7649	0·9785	1·250	1·638	2·353	3·182	4·541	5·841	10·21	12·92
4	0·2707	0·5686	0·7407	0·9410	1·190	1·533	2·132	2·776	3·747	4·604	7·173	8·610
5	0·2672	0·5594	0·7267	0·9195	1·156	1·476	2·015	2·571	3·365	4·032	5·893	6·869
6	0·2648	0·5534	0·7176	0·9057	1·134	1·440	1·943	2·447	3·143	3·707	5·208	5·959
7	0·2632	0·5491	0·7111	0·8960	1·119	1·415	1·895	2·365	2·998	3·499	4·785	5·408
8	0·2619	0·5459	0·7064	0·8889	1·108	1·397	1·860	2·306	2·896	3·355	4·501	5·041
9	0·2610	0·5435	0·7027	0·8834	1·100	1·383	1·833	2·262	2·821	3·250	4·297	4·781
10	0·2602	0·5415	0·6998	0·8791	1·093	1·372	1·812	2·228	2·764	3·169	4·144	4·587
11	0·2596	0·5399	0·6974	0·8755	1·088	1·363	1·796	2·201	2·718	3·106	4·025	4·437
12	0·2590	0·5386	0·6955	0·8726	1·083	1·356	1·782	2·179	2·681	3·055	3·930	4·318
13	0·2586	0·5375	0·6938	0·8702	1·079	1·350	1·771	2·160	2·650	3·012	3·852	4·221
14	0·2582	0·5366	0·6924	0·8681	1·076	1·345	1·761	2·145	2·624	2·977	3·787	4·140
15	0·2579	0·5357	0·6912	0·8662	1·074	1·341	1·753	2·131	2·602	2·947	3·733	4·073
16	0·2576	0·5350	0·6901	0·8647	1·071	1·337	1·746	2·120	2·583	2·921	3·686	4·015
17	0·2573	0·5344	0·6892	0·8633	1·069	1·333	1·740	2·110	2·567	2·898	3·646	3·965
18	0·2571	0·5338	0·6884	0·8620	1·067	1·330	1·734	2·101	2·552	2·878	3·610	3·922
19	0·2569	0·5333	0·6876	0·8610	1·066	1·328	1·729	2·093	2·539	2·861	3·579	3·883
20	0·2567	0·5329	0·6870	0·8600	1·064	1·325	1·725	2·086	2·528	2·845	3·552	3·850
21	0·2566	0·5325	0·6864	0·8591	1·063	1·323	1·721	2·080	2·518	2·831	3·527	3·819
22	0·2564	0·5321	0·6858	0·8583	1·061	1·321	1·717	2·074	2·508	2·819	3·505	3·792
23	0·2563	0·5317	0·6853	0·8575	1·060	1·319	1·714	2·069	2·500	2·807	3·485	3·768
24	0·2562	0·5314	0·6848	0·8569	1·059	1·318	1·711	2·064	2·492	2·797	3·467	3·745
25	0·2561	0·5312	0·6844	0·8562	1·058	1·316	1·708	2·060	2·485	2·787	3·450	3·725
26	0·2560	0·5309	0·6840	0·8557	1·058	1·315	1·706	2·056	2·479	2·779	3·435	3·707
27	0·2559	0·5306	0·6837	0·8551	1·057	1·314	1·703	2·052	2·473	2·771	3·421	3·690
28	0·2558	0·5304	0·6834	0·8546	1·056	1·313	1·701	2·048	2·467	2·763	3·408	3·674
29	0·2557	0·5302	0·6830	0·8542	1·055	1·311	1·699	2·045	2·462	2·756	3·396	3·659
30	0·2556	0·5300	0·6828	0·8538	1·055	1·310	1·697	2·042	2·457	2·750	3·385	3·646
32	0·2555	0·5297	0·6822	0·8530	1·054	1·309	1·694	2·037	2·449	2·738	3·365	3·622
34	0·2553	0·5294	0·6818	0·8523	1·052	1·307	1·691	2·032	2·441	2·728	3·348	3·601
36	0·2552	0·5291	0·6814	0·8517	1·052	1·306	1·688	2·028	2·434	2·719	3·333	3·582
38	0·2551	0·5288	0·6810	0·8512	1·051	1·304	1·686	2·024	2·429	2·712	3·319	3·566
40	0·2550	0·5286	0·6807	0·8507	1·050	1·303	1·684	2·021	2·423	2·704	3·307	3·551
50	0·2547	0·5278	0·6794	0·8489	1·047	1·299	1·676	2·009	2·403	2·678	3·261	3·496
60	0·2545	0·5272	0·6786	0·8477	1·045	1·296	1·671	2·000	2·390	2·660	3·232	3·460
120	0·2539	0·5258	0·6765	0·8446	1·041	1·289	1·658	1·980	2·358	2·617	3·160	3·373
∞	0·2533	0·5244	0·6745	0·8416	1·036	1·282	1·645	1·960	2·326	2·576	3·090	3·291

STATISTICAL TABLES **1**

TABLE A.1

Cumulative Standardized Normal Distribution



$A(z)$ is the integral of the standardized normal distribution from $-\infty$ to z (in other words, the area under the curve to the left of z). It gives the probability of a normal random variable not being more than z standard deviations above its mean. Values of z of particular importance:

z	$A(z)$	
1.645	0.9500	Lower limit of right 5% tail
1.960	0.9750	Lower limit of right 2.5% tail
2.326	0.9900	Lower limit of right 1% tail
2.576	0.9950	Lower limit of right 0.5% tail
3.090	0.9990	Lower limit of right 0.1% tail
3.291	0.9995	Lower limit of right 0.05% tail

z	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.5000	0.5040	0.5080	0.5120	0.5160	0.5199	0.5239	0.5279	0.5319	0.5359
0.1	0.5398	0.5438	0.5478	0.5517	0.5557	0.5596	0.5636	0.5675	0.5714	0.5753
0.2	0.5793	0.5832	0.5871	0.5910	0.5948	0.5987	0.6026	0.6064	0.6103	0.6141
0.3	0.6179	0.6217	0.6255	0.6293	0.6331	0.6368	0.6406	0.6443	0.6480	0.6517
0.4	0.6554	0.6591	0.6628	0.6664	0.6700	0.6736	0.6772	0.6808	0.6844	0.6879
0.5	0.6915	0.6950	0.6985	0.7019	0.7054	0.7088	0.7123	0.7157	0.7190	0.7224
0.6	0.7257	0.7291	0.7324	0.7357	0.7389	0.7422	0.7454	0.7486	0.7517	0.7549
0.7	0.7580	0.7611	0.7642	0.7673	0.7704	0.7734	0.7764	0.7794	0.7823	0.7852
0.8	0.7881	0.7910	0.7939	0.7967	0.7995	0.8023	0.8051	0.8078	0.8106	0.8133
0.9	0.8159	0.8186	0.8212	0.8238	0.8264	0.8289	0.8315	0.8340	0.8365	0.8389
1.0	0.8413	0.8438	0.8461	0.8485	0.8508	0.8531	0.8554	0.8577	0.8599	0.8621
1.1	0.8643	0.8665	0.8686	0.8708	0.8729	0.8749	0.8770	0.8790	0.8810	0.8830
1.2	0.8849	0.8869	0.8888	0.8907	0.8925	0.8944	0.8962	0.8980	0.8997	0.9015
1.3	0.9032	0.9049	0.9066	0.9082	0.9099	0.9115	0.9131	0.9147	0.9162	0.9177
1.4	0.9192	0.9207	0.9222	0.9236	0.9251	0.9265	0.9279	0.9292	0.9306	0.9319
1.5	0.9332	0.9345	0.9357	0.9370	0.9382	0.9394	0.9406	0.9418	0.9429	0.9441
1.6	0.9452	0.9463	0.9474	0.9484	0.9495	0.9505	0.9515	0.9525	0.9535	0.9545
1.7	0.9554	0.9564	0.9573	0.9582	0.9591	0.9599	0.9608	0.9616	0.9625	0.9633
1.8	0.9641	0.9649	0.9656	0.9664	0.9671	0.9678	0.9686	0.9693	0.9699	0.9706
1.9	0.9713	0.9719	0.9726	0.9732	0.9738	0.9744	0.9750	0.9756	0.9761	0.9767
2.0	0.9772	0.9778	0.9783	0.9788	0.9793	0.9798	0.9803	0.9808	0.9812	0.9817
2.1	0.9821	0.9826	0.9830	0.9834	0.9838	0.9842	0.9846	0.9850	0.9854	0.9857
2.2	0.9861	0.9864	0.9868	0.9871	0.9875	0.9878	0.9881	0.9884	0.9887	0.9890
2.3	0.9893	0.9896	0.9898	0.9901	0.9904	0.9906	0.9909	0.9911	0.9913	0.9916
2.4	0.9918	0.9920	0.9922	0.9925	0.9927	0.9929	0.9931	0.9932	0.9934	0.9936
2.5	0.9938	0.9940	0.9941	0.9943	0.9945	0.9946	0.9948	0.9949	0.9951	0.9952
2.6	0.9953	0.9955	0.9956	0.9957	0.9959	0.9960	0.9961	0.9962	0.9963	0.9964
2.7	0.9965	0.9966	0.9967	0.9968	0.9969	0.9970	0.9971	0.9972	0.9973	0.9974
2.8	0.9974	0.9975	0.9976	0.9977	0.9977	0.9978	0.9979	0.9979	0.9980	0.9981
2.9	0.9981	0.9982	0.9982	0.9983	0.9984	0.9984	0.9985	0.9985	0.9986	0.9986
3.0	0.9987	0.9987	0.9987	0.9988	0.9988	0.9989	0.9989	0.9989	0.9990	0.9990
3.1	0.9990	0.9991	0.9991	0.9991	0.9992	0.9992	0.9992	0.9992	0.9993	0.9993
3.2	0.9993	0.9993	0.9994	0.9994	0.9994	0.9994	0.9994	0.9995	0.9995	0.9995
3.3	0.9995	0.9995	0.9995	0.9996	0.9996	0.9996	0.9996	0.9996	0.9996	0.9997
3.4	0.9997	0.9997	0.9997	0.9997	0.9997	0.9997	0.9997	0.9997	0.9997	0.9998
3.5	0.9998	0.9998	0.9998	0.9998	0.9998	0.9998	0.9998	0.9998	0.9998	0.9998
3.6	0.9998	0.9998	0.9999							